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Reaction of tetracyclone with methyl phenylphosphinate in the presence of catalysts

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Abstract

1. Methyl phenylphosphinate reacts with tetracyclone in the absence of catalysts according to a scheme involving 1,4 and 1,6 addition of the conjugated cyclone system to form methyl 2,3,4,5-tetraphenyl-4-cyclopenten-1-one-3-phenylphosphinate and 2,3,4,5 -tetraphenyl-3-cyclopen-en-1-one-2-phenylphosphinate, respectively. 2. Upon heating, the 1,6 adduct is prototropically isomerized to form methyl 2,3,4,5-tetraphenyl-4-cyclopenten-1-one-2-phenylphosphinate and simultaneously dissociates back to the original components, which again react to form the thermodynamically more stable 1,4 adduct. 3. The β- and γ-conjugated keto phosphinates with a cis configuration of the methylidyne proton and the phosphinate group have been isolated in the form of pairs of diastereomers with respect to the asymmetric phosphorus and carbon atoms. © 1978 Plenum Publishing Corporation.

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